

**CHAPTER 6** **Chapter Test A**  
For use after Chapter 6

A skip 24+25  
C skip 1, 4-6, 9, 12, 21, 22

**Simplify the ratio.**

1.  $\frac{34 \text{ cm}}{4 \text{ cm}}$

2.  $\frac{10 \text{ ft}}{30 \text{ in.}}$   $\frac{120}{360}$

3.  $\frac{4 \text{ lb}}{8 \text{ oz}}$   $\frac{16}{8}$

4.  $\frac{2 \text{ L}}{50 \text{ mL}}$   $\frac{2000}{50}$

KHDB DCM Answers

1.  $17/2$

2.  $4:1$

3.  $8:1$

4.  $40:1$

5.  $x=24$

6.  $x=14$

7.  $x=1$

8.  $x=5$

9.  $x=12$

10.  $20$

11.  $6\sqrt{10}$

12.  $BE=15$

13.  $PS=18$

14.  $JKLM \sim PQRS$

SF 2:5

15.  $\triangle TUV \sim \triangle XYZ$

S.F. 4:3

16.  $AA \sim$

$\triangle ABC \sim \triangle GFH$

17. No

**Solve the proportion.**

5.  $\frac{8}{8} = \frac{x}{x}$

6.  $\frac{x}{30} = \frac{7}{15}$

7.  $\frac{18}{x} = \frac{x+1}{4}$

8.  $\frac{2}{3x-10} = \frac{8}{20}$

**Find the geometric mean of the two numbers.**

9. 6 and 24  $\frac{6}{x} = \frac{x}{24}$

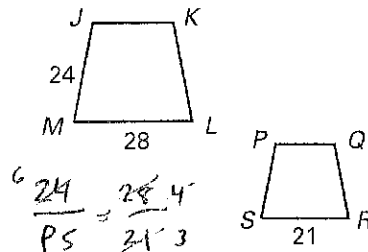
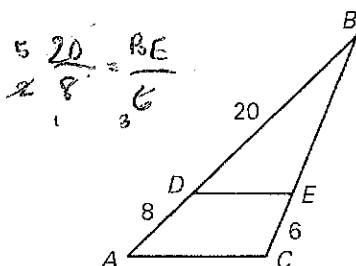
10. 16 and 25  $\frac{16}{x} = \frac{x}{25}$

11. 12 and 30  $\frac{12}{x} = \frac{x}{30}$

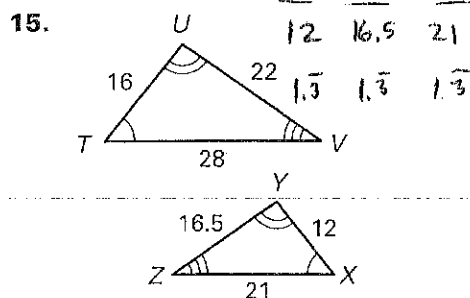
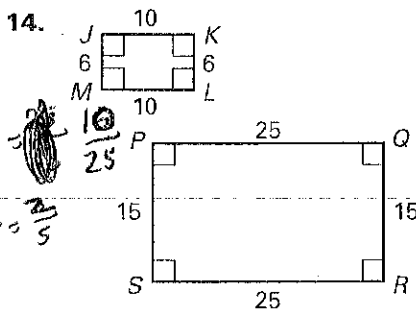
**Use the diagram and the given information to find the unknown length.**

12. Given  $\frac{BD}{DA} = \frac{BE}{EC}$ , find BE.

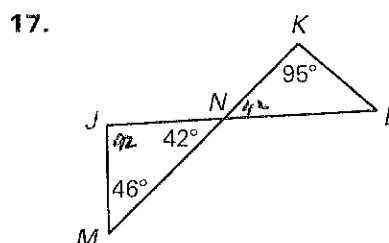
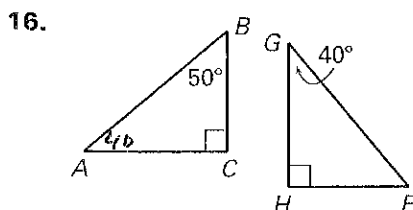
13. Given  $\frac{JM}{PS} = \frac{ML}{SR}$ , find PS.



**Determine whether the polygons are similar. If they are, write a similarity statement and find the scale factor.**



**In Exercises 16–19, determine whether the triangles are similar. If they are, write a similarity statement.**

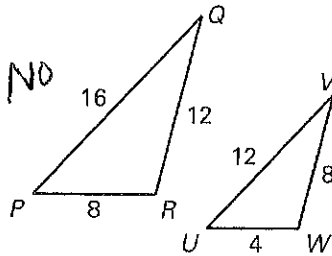


CHAPTER  
6

**Chapter Test A** *continued*  
For use after Chapter 6

18.

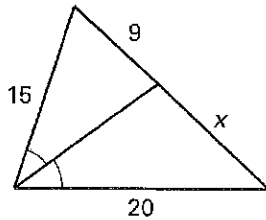
$$\frac{8}{4} = \frac{12}{8} = \frac{16}{12}$$



Find the value of  $x$ .

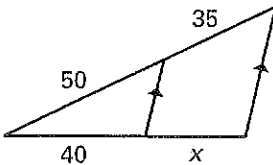
20.

$$\frac{15}{39} = \frac{20}{x}$$



22.

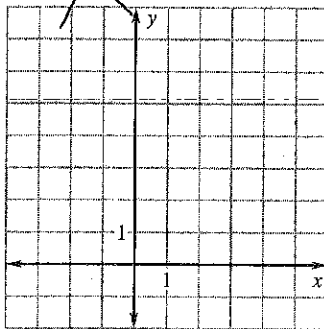
$$\frac{50}{735} = \frac{40}{x}$$



Draw a dilation of the polygon with the given vertices using the given scale factor  $k$ .

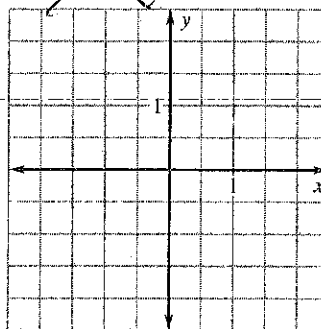
24.  $A(-1, 1), B(2, 1), C(1, 2);$

$k = 3$



25.  $A(-4, 4), B(-4, 8), C(0, 4);$

$k = \frac{1}{4}$



26. The perimeter of a rectangular corn field is 440 meters. The ratio of its length to its width is 7:4. What is the length and width of the field?

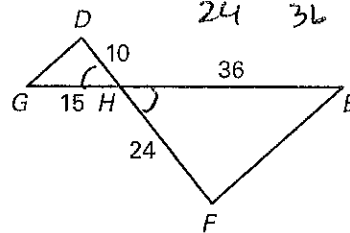
$$2(7x + 4x) = 440$$

$$22x = 440$$

$$x = 20$$

140m  
80m

19.



$$\frac{10}{24} = \frac{15}{36}$$

**Answers**

18. No

19. SF 2:3 SAS

$\triangle DHG \sim \triangle FHE$

20.  $x = 12$

21.  $x = 24$

22.  $x = 28$

23.  $x = 26$

24. See left.

25. See left.

26. 140m 80m

**CHAPTER 6**
**Chapter Test C**

For use after Chapter 6

Simplify the ratio.

~~1.  $\frac{3 \text{ gallons}}{27 \text{ quarts}}$~~

~~2.  $\frac{500 \text{ mm}}{2.5 \text{ m}}$~~

~~3.  $\frac{150 \text{ lb}}{100 \text{ oz}}$~~

Solve the proportion.

~~4.  $\frac{6}{13} = \frac{3x}{91}$~~

~~5.  $\frac{x+6}{x} = \frac{5}{4}$~~

~~6.  $\frac{3}{10} = \frac{5x+b}{18x-6}$~~

Use the diagram and the given information to find the unknown length.

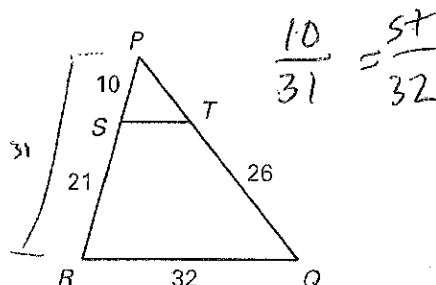
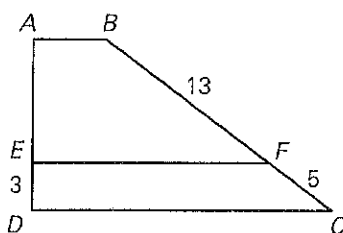
7. Given  $\frac{BC}{CF} = \frac{AD}{DE}$ , find AE.

8. Given  $\frac{PR}{PS} = \frac{RQ}{ST}$ , find ST.

$$\frac{18}{5} = \frac{x+3}{3}$$

$$54 = 5x + 15$$

$$x = \frac{39}{5}$$



- ~~9.~~ The lengths of the legs of right triangle FGH are 12 meters and 16 meters. The shortest side of  $\triangle JKL$  is 2.4 meters and  $\triangle JKL \sim \triangle FGH$ . How long is the hypotenuse of  $\triangle JKL$ ?

In the diagram,  $\triangle LMN \sim \triangle PQR$ .

10. Find the scale factor of
- $\triangle PQR$
- to
- $\triangle LMN$
- .

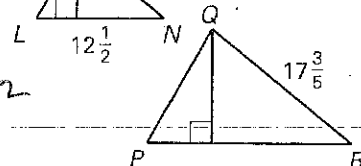
11. Find the length of the altitude shown in
- $\triangle PQR$
- .

- ~~12.~~
- Estimate the lengths of LM and PQ. Round your answers to the nearest tenth.

$$8:5 = \frac{17\frac{3}{5}}{11} = \frac{16}{10} = \frac{8}{5}$$

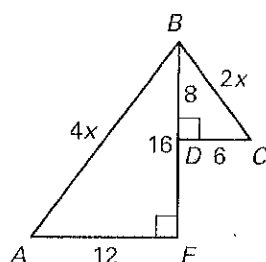
$$\frac{8}{5} = \frac{x}{7}$$

$$x = 11.2$$

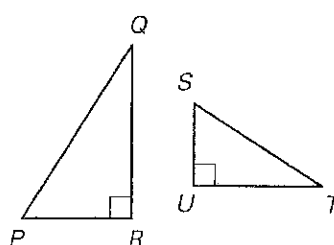


In Exercises 13–16, determine whether the triangles are similar. If they are, write a similarity statement.

13.



14.



Answers

~~1.  $\frac{3}{27}$~~

~~2.  $\frac{1}{5}$~~

~~3.  $\frac{24}{100}$~~

~~4.  $\frac{6}{13} = \frac{3x}{91}$~~

~~5.  $\frac{x+6}{x} = \frac{5}{4}$~~

~~6.  $\frac{3}{10} = \frac{5x+b}{18x-6}$~~

~~7.  $\frac{39}{5} = AE$~~

~~8.  $\frac{320}{31} = ST$~~

~~9.  $\frac{12}{16} = \frac{2.4}{x}$~~

~~10.  $8:5$~~

~~11.  $11.2$~~

~~12.  $\frac{12}{16} = \frac{2.4}{x}$~~

~~13.  $\triangle AEB \sim \triangle CDB$~~

~~14.  $\frac{12}{6} = \frac{16}{8}$~~

~~15.  $\frac{12}{6} = \frac{16}{8}$~~

~~16.  $\frac{12}{6} = \frac{16}{8}$~~

~~17.  $\frac{12}{6} = \frac{16}{8}$~~

~~18.  $\frac{12}{6} = \frac{16}{8}$~~

~~19.  $\frac{12}{6} = \frac{16}{8}$~~

~~20.  $\frac{12}{6} = \frac{16}{8}$~~

~~21.  $\frac{12}{6} = \frac{16}{8}$~~

~~22.  $\frac{12}{6} = \frac{16}{8}$~~

~~23.  $\frac{12}{6} = \frac{16}{8}$~~

~~24.  $\frac{12}{6} = \frac{16}{8}$~~

~~25.  $\frac{12}{6} = \frac{16}{8}$~~

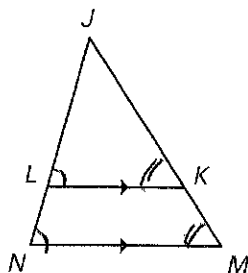
~~26.  $\frac{12}{6} = \frac{16}{8}$~~

~~27.  $\frac{12}{6} = \frac{16}{8}$~~

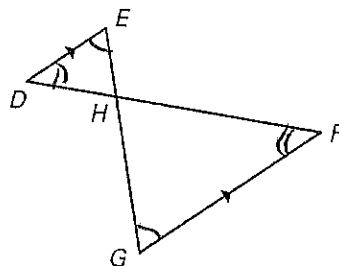
~~28.  $\frac{12}{6} = \frac{16}{8}$~~

**CHAPTER  
6**
**Chapter Test C** *continued*  
For use after Chapter 6

15.



16.


**Answers**

15.  $\triangle JLK \sim \triangle JNM$

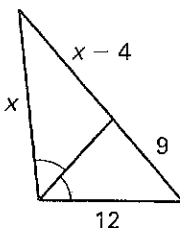
$AA \sim$

16.  $\triangle DEH \sim \triangle FGH$

$AA \sim$

Find the value of  $x$ .

17.

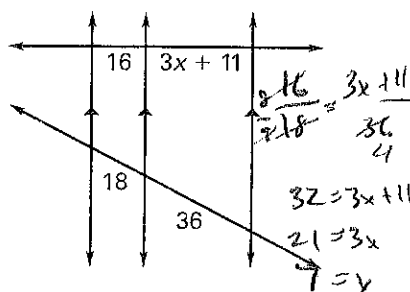


$$\frac{x}{x-4} = \frac{12}{9}$$

$$3x = 4x - 16$$

$$x = 16$$

18.



$$\frac{16}{18} = \frac{3x+11}{36}$$

$$32 = 3x + 11$$

$$21 = 3x$$

$$7 = x$$

17.  $x = 16$

18.  $x = 7$

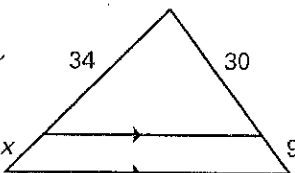
19.  $x = 10.2$

20.  $x = 5$

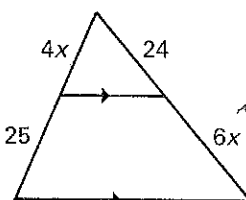
21. See left.

22. See left.

19.



20.



$$\frac{4x}{25} = \frac{24}{6x}$$

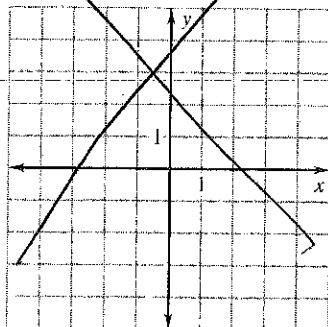
$$x^2 = 25$$

$$x = 5$$

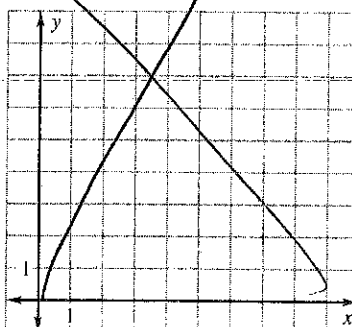
23. 369 euros

Draw a dilation of the polygon with the given vertices using the given scale factor  $k$ .

21.  $A(-12, -6), B(-6, -3), C(-3, 6), D(-12, 6); k = \frac{1}{6}$



22.  $A(0, 0), B(0, 2), C(2, 2), D(4, 0); k = 2.25$



23. You take 450 U.S. dollars to the bank to exchange for European euros. The exchange rate on that day is about 0.82 euros per U.S. dollar. How many European euros did you get for the 450 U.S. dollars?

$$\frac{1\$}{0.82\text{e}} = \frac{450}{x\text{e}}$$

$$369$$